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AUTHOR Stager, Susan Ferencz; Burke, Peter
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ABSTRACT

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BODY BUILD STEREOTYPES: A NEW METHODOLOGY

Susan Ferencz Stager and Peter Burke

Department of Sociology
Indiana University

Using the interactionist framework and semantic differential and discriminant analysis techniques, the study sought to determine (a) the existence of body build stereotypes, (b) the extent of identification with these stereotypes, and (c) the effect of such identification upon the child's self evaluation. The subjects were 388 children in grades four to eight from a midwestern community. All subjects were white and had predominantly middle class backgrounds. Subjects completed the Piers-Harris Children's Self Concept Scale and semantic differential ratings of the Global self concept and the body build concepts of "SKINNY GIRL", "FAT GIRL", "SKINNY BOY", and "FAT BOY". Measures of weight and height were obtained using a standard weighing scale and wall chart. Fat child and skinny child stereotypes were found to be invariant across age and sex groups and did not appear to be gender specific. Actual fatness was found to be generally related to identification with a body build stereotype, but not strongly so. Low self esteem was a concomitant of identification with the fat child stereotype.

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A series of studies in the late sixties and early seventies found mesomorphic, endomorphic, and ectomorphic stereotypes to be relatively invariant across the age groups studied and between the sexes. As predicted, the 'deviant' physiques were associated with the more negative adjectives and behavioral descriptors. These studies were important because the evidence of invariant body build stereotypes was used to support the claim that social learning theory accounted for the observed relationship between body build and behavior.

However, a methodological critique by Lerner, Knapp and Pool casts doubt upon the validity of these earlier findings. The forced choice methodology of the previous body build research was deemed inappropriate. The forced choice format requires subjects to assign verbal check list items to one or more stimulus persons whether such items are felt to apply or not.

Methodologies based on the interactionist perspective may be more appropriate than the forced choice format. Interactionists posit that children learn to make judgements about themselves which are similar to those judgements made by others through the process of adopting the role of the other. It would be predicted, therefore, that children will come to identify with body build stereotypes, that is, view themselves as being a 'fat' or 'skinny' person, if commonly-held conceptualizations of body builds exist and others judge the children to have these characteristics. As a result of this identification it further would be predicted that children with 'deviant' physiques will come to evaluate themselves negatively.

One measure of the degree to which a stereotype has been identified with is the comparability of the self identity and the body build stereotype. Burke and Tully have developed a generalizable methodology to measure identification with a stereotype. The techniques of this methodology, the semantic differential and discriminant analysis, may be used to distinguish the endomorphic body build stereotype from the ectomorphic, and to assess identification with these 'deviant' stereotypes. Unlike the forced choice format, the semantic differential permits subjects to independently rate the three body build groups. Thus subjects are not 'forced' to assign an adjective to any of the three groups. Too, subjects may locate the body build groups along a number of points of the bipolar continuum, not just the end points, allowing more subtle distinctions between groups. Discriminant analysis can then be used to define the most important dimensions distinguishing one body build stereotype from its counter-stereotype by discovering the appropriate set of weights. These same weights can then be used to compute a numerical score for each subject which is a measure of identification with the body build stereotypes.

The present study further developed the improved methodology of Burke and Tully. Using the interactionist framework and semantic differential and discriminant analysis techniques, the study sought to determine (a) the existence of body build stereotypes, (b) the extent of identification with these stereotypes, and (c) the effect of such identification upon the child's self evaluation.

The subjects of the study were 388 children in grades four to eight from a midwestern community. All subjects were white and had

predominately middle class backgrounds. Fifty-one percent of the sample were females.

The subjects filled out questionnaires in their classrooms or a nearby room. The questionnaire was orally administered by the examiner to the classroom as a group. Each questionnaire had two main parts: the Piers-Harris Children's Self Concept Scale, and a series of semantic differential rating scales all using the same 12 adjective pairs. Ratings were obtained of the Global self concept or "ME" and the body build concepts of "SKINNY GIRL", "FAT GIRL", "SKINNY BOY", and "FAT BOY". Measures of weight and height were obtained using a standard weighing scale and wall chart.

To assess the existence of differential sterotyped conceptions of "fat child" and "skinny child", a multiple discriminant analysis was computed. Two statistically significant discriminant functions were derived for the totalsample and for each of the subsamples. Only the first function was judged "strong" from the canonical coorelation, however. The standardized discriminant function coefficients appear in Table 1. It can be seen from the content of the adjective pairs with high loadings that the first function measured the skinny/fat dimension while the second, weak function measured the male/female dimension. There appeared to be no interaction between the skinny/fat dimension and the male/female dimension. In this study we focused upon the first dimension. From Table 1 it can also be seen that the five most important adjective pairs in the first function are strong/weak, many frineds/few friends, brave/afraid, good looking/ ugly, and doesn't get teased/gets teased. Table 2 presents the eta square values for these five adjectives and for the entire set of adjectives for the total sample and each of the subsamples. In each case the

absolute value of the squared eta is quite large, indicating the existence of commonly-held body build stereotypes. That is, the items discriminate between skinniness and fatness, and do so in a common way across individuals in the total sample or subsamples.

Of the 1,522 classifications made of the two groups, that is, "skinny child" which pools skinny girl and skinny boy, and "fat child" which pools fat girl and fat boy, 78% were correct.

In the next analysis the discriminant function weights were used to provide a measure of identification with the locally-prescribed body build stereotypes. Semantic differential ratings of the Global Self were weighted using the above weights, and summed, yielding a set of identification scores. On the basis of these scores subjects were classified as identifying with a deviant body build stereotype or identifying with the "average" child. The results of this analysis are presented in Table 3.

A consistent pattern emerges across grade levels. At each grade level the "average" child is the most commonly adopted identity. A chi square analysis shows that males significantly more often identify with the "fat child" stereotype, while the reverse is true of females. Thus, there appear to be sex differences in the type of body build stereotype inculcated.

Regression was used to determine to what degree actual fatness is related to identification with the "fat child" or "skinny child" stereotype. The regression coefficients are presented in Table 4. It can be seen that actual fatness, that is, the ratio of weight to height standardized for each sex and grade, was significantly related

to identification with the body build stereotypes at the fourth, seventh, and eighth grade levels. Children in these grade levels whose weight to height ratio suggests that they are physiologically fat tend to perceive themselves as similar to "fat children" as defined by the peer group. Likewise, children whose weight to height ratio suggests that they are physiologically skinny or average, tend to perceive themselves as similar to the locally-prescribed "skinny child" stereotype and the "average" child, respectively. The grade by sex interaction for the total sample was significant suggesting that grade level differences are not due to sampling but reflect real variations.

In the final analysis, analysis of covariance was used to examine the effect of identification with the body build stereotypes upon the child's self esteem. Because we are interested in the effects of self identification, the analysis controlled for actual fatness in addition to sex and grade level. The Piers-Harris scales were used as a measure of general self esteem. Subscale scores based on the factor structure reported by the scale's authors were used as measures of physical appearance self esteem, social self esteem, and academic self esteem.

The results are presented in Tables 5 through 8. When general self esteem was used as the dependent variable, the factor of identification and the factor of actual fatness were highly significant. Subjects in each sex and grade subsample who perceived themselves as most like the "fat child" stereotype had the lowest self esteem regardless of their actual weight. These effects continued to hold for each of the specific self esteem variables relating to physical appearance, popularity, and intellectual and school status. In each

case the impact of the self identification as "fat" was a stronger factor than actual fatness.

A significant three-way interaction (grade by sex by identification) was found for the general self esteem and academic self esteem variables. An examination of the means for these two self esteem variables suggests no clear pattern of variability, however.

In conclusion, the present study verified with semantic differential and discriminant analysis methodologies the existence of a "fat child" and "skinny child" stereotype which is invariant across sex groups and the grade levels studied. Fat children were described as stronger, braver, less good looking, more often teased, and having fewer friends than skinny children. The body build stereotypes do not appear to be gender specific.

The argument that the methodology of Burke and Tully permits a more accurate portrayal of body build stereotypes than the forced choice format is supported by the data. In contrast to the overwhelmingly negative endomorphic stereotype derived from the forced choice format, the "fat child" stereotype derived in the present study has two important positive dimensions — strength and bravery. The finding of only five important dimensions further suggests that the number of negative adjectives and behavioral phrases attributed to the "fat child" in the past studies was an artifact of the methodology employed. Ratings of the "skinny child" in the present study were also more favorable than those in the past.

The findings were consistent with the interactionist predictions. Actual fatness was found to be generally related to identification with the "fat child" or "skinny child" stereotype, but not strongly so. The

finding that actual fatness is related to identification even in the youngest grade studied suggests that locally-prescribed standards for body build are internalized at a very young age. Identification with either the "fat child" or "skinny child" stereotype was significantly related to general self esteem and the physical appearance, social, and academic factors of self esteem, with low self esteem a concomitant of identification with the fat child body build.

Table 1

Standardized Discriminant Function Coefficients

of the Bipolar Adjective Pairs

Adjective Pair	Function 1	Function 2
quiet/loud	-.04	.00
strong/weak	.69	.00
kind/mean	.02	-.28
many friends/few friends	-.31	-.15
works hard/lazy	-.27	.26
healthy/sick	.12	-.07
brave/afraid	.30	.59
good looking/ugly	-.49	.39
smart/stupid	.09	-.41
neat/sloppy	-.21	-.30
doesn't get teased/gets teased	-.24	.46
happy/sad	-.15	.19

Table 2

Eta Square for the Five Best Items for the Discriminant Function Derived for the Total Sample and Subsamples

Sample	Unique Items Among the Five Best Adjectives	Eta Square for: Best Five	Eta Square for: All Adjectives
Elementary School		.63	.66
Boys	works hard/lazy	.69	.72
Girls	quiet/loud	.60	.63
Fourth Graders	neat/sloppy	.63	.67
Fifth Graders	quiet/loud	.64	.68
Middle School	works hard/lazy	.62	.65
Boys	neat/sloppy works hard/lazy	.65	.69
Girls	kind/mean	.61	.64
Sixth Graders	neat/sloppy	.61	.65
Seventh Graders		.63	.65
Eighth Graders	neat/sloppy happy/sad smart/stupid	.69	.72
Total		.62	.65

Table 3

Global Self ("Me") Ratings Classified
by Group Discriminant Function

Grade	Sex	n	Classification		
			Skinny Child	"Average Child"	Fat Child
4	M	24	0 [a]	83	17
	F	42	17	64	19
5	M	24	4	67	29
	F	47	23	60	17
6	M	57	11	75	14
	F	50	10	78	12
7	M	34	15	71	15
	F	35	23	60	17
8	M	50	6	76	18
	F	25	32	52	16

[a] All figures are expressed as percentages

Table 4

Results of Regression of Identification with Body Build Stereotypes on Actual Fatness

Grade	R^2	Standardized Regression Coefficients Actual Body Build
4	.09	.2997 *
5	.04	.1947
6	.00	-.0382
7	.17	.4131 **
8	.13	.3647 *

*$p \leq .05$

**$p \leq .01$

***$p \leq .001$

Table 5

Analysis of Covariance: General Self Esteem

Source	SS	df	MS	F
Main Effects	1.247	8	.156	7.597***
Actual Fatness (covariate)	.078	1	.078	3.783*
Sex	.000	1	.000	.011
Identification	.962	2	.481	23.425***
Grade	.052	4	.013	.632
2-Way Interactions	.482	14	.034	1.657
Sex by Identification	.079	2	.040	1.934
Sex by Grade	.220	4	.055	2.683*
Identification by Grade	.183	8	.023	1.117
3-Way Interaction	.331	7	.047	2.305*
Residual	4.351	212	.021	
Total	6.406	241	.027	

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Table 6

Analysis of Covariance: Physical Appearance and Attributes Factor

Source	SS	df	MS	F
Main Effects	3.675	8	.459	6.948***
Actual Fatness(covariate)	.126	1	.126	1.911
Sex	.874	1	.874	13.226***
Identification	1.918	2	.959	14.506***
Grade	.552	4	.138	2.087
2-Way Interactions	1.023	14	.073	.451
Sex by Identification	.009	2	.005	.071
Sex by Grade	.102	4	.025	.384
Identification by Grade	.912	8	.130	.472
3-Way Interaction	.912	7	.130	1.970
Residual	17.323	262	.066	
Total	22.327	291	.077	

*$p \leq .05$
**$p \leq .01$
***$p \leq .001$

Table 7

Analysis of Covariance: Popularity Factor

Source	SS	df	MS	F
Main Effects	3.932	8	.491	11.524***
Actual Fatness(covariate)	.063	1	.063	1.350
Sex	.016	1	.016	.345
Identification	3.398	2	1.699	36.380***
Grade	.042	4	.010	.225
2-Way Interactions	.681	14	.049	1.041
Sex by Identification	.058	2	.029	.620
Sex by Grade	.360	4	.090	1.927
Identification by Grade	.311	8	.039	.832
3-Way Interaction	.273	7	.039	.835
Residual	12.048	258	.047	
Total	16.934	287	.059	

*$p \leq .05$
**$p \leq .01$
***$p \leq .001$

Table 8

Analysis of Covariance: School and Intellectual Status Factor

Source	SS	df	MS	F
Main Effects	2.677	8	.335	5.552***
Actual Fatness(covariate)	.120	1	.120	1.992
Sex	.224	1	.224	3.717
Identification	1.085	2	.543	9.000***
Grade	1.005	4	.251	4.170**
2-Way Interactions	1.122	14	.080	1.331
Sex by Identification	.119	2	.059	.985
Sex by Grade	.809	4	.202	3.354**
Identification by Grade	.153	8	.019	.317
3-Way Interaction	.852	7	.122	2.019*
Residual	15.613	259	.060	
Total	20.265	288	.070	

*$p \leq .05$
**$p \leq .01$
***$p \leq .001$